

```
--1. Total Sales by City
SELECT
    City,
    SUM(Sales) AS TotalSales
FROM
    Orders
GROUP BY
    City
ORDER BY
    TotalSales DESC;
```

	City	TotalSales
1	San Francisco	8055046.60
2	Los Angeles	5310846.93
3	New York City	4567165.01
4	Boston	3576754.73
5	Atlanta	2721689.32
6	Dallas	2702230.45
7	Seattle	2682930.41
8	Portland	2267084.04
9	Austin	1787851.98

```
--2. Top-Selling Products
WITH RankedProducts AS (
    SELECT
        Product,
        SUM(QuantityOrdered) AS TotalQuantity,
        ROW_NUMBER() OVER (ORDER BY SUM(QuantityOrdered) DESC) AS RowNum
    FROM
        Orders
    GROUP BY
        Product
)
SELECT
    Product,
    TotalQuantity
FROM
    RankedProducts
WHERE
    RowNum <= 5;
```

	Product	TotalQuantity
1	AAA Batteries (4-pack)	30372
2	AA Batteries (4-pack)	27136
3	USB-C Charging Cable	22109
4	Lightning Charging Cable	21715
5	Wired Headphones	19120

--3. Monthly Revenue Trends

```

SELECT
    Month,
    SUM(Sales) AS MonthlyRevenue
FROM
    Orders
GROUP BY
    Month
ORDER BY
    Month;

```

	Month	MonthlyRevenue
1	1	1782214.90
2	2	2146232.20
3	3	2739938.02
4	4	3308277.50
5	5	3075410.70
6	6	2516633.11
7	7	2584388.35
8	8	2192824.44
9	9	2048845.16
10	10	3651082.99
11	11	3120487.12
12	12	4505264.98

--4. Total Sales by Product Category

```

SELECT
    ProductCategory,
    SUM(Sales) AS TotalSales
FROM
    Orders
GROUP BY

```

```

ProductCategory
ORDER BY
TotalSales DESC;

```

	ProductCategory	TotalSales
1	Laptops and Computers	11905559.62
2	Phones and Accessories	8776100.00
3	Monitors	6247863.67
4	Audio Devices	3770919.86
5	Entertainment Devices	1415700.00
6	Home Appliances	771600.00
7	Charging Cables	588841.80
8	Batterie	195014.52

```

--5. Hourly Sales Distribution
SELECT
    Hour,
    SUM(Sales) AS TotalSales
FROM
    Orders
GROUP BY
    Hour
ORDER BY
    Hour;

```

	Hour	TotalSales
1	0	698026.38
2	1	448714.66
3	2	229557.77
4	3	142703.69
5	4	157537.93
6	5	223563.76
7	6	439315.79
8	7	729061.89
9	8	1168940.67
10	9	1595857.04
11	10	1889044.84
12	11	2249717.57
13	12	2264469.15
14	13	2111724.35
15	14	2033071.79

--6. Cumulative Sales by City

```
SELECT
    City,
    SUM(Sales) OVER (PARTITION BY City ORDER BY OrderDate) AS CumulativeSales
FROM
    Orders;
```

	City	CumulativeSales
1	Atlanta	23.90
2	Atlanta	723.90
3	Atlanta	873.90
4	Atlanta	1573.90
5	Atlanta	1581.58
6	Atlanta	1593.53
7	Atlanta	1596.52
8	Atlanta	1608.47
9	Atlanta	2208.47
10	Atlanta	2908.47
11	Atlanta	3208.47
12	Atlanta	3214.45
13	Atlanta	3324.44
14	Atlanta	3434.43
15	Atlanta	3814.43

--7. Ranking Products by Sales

```
SELECT
    Product,
    SUM(Sales) AS TotalSales,
    RANK() OVER (ORDER BY SUM(Sales) DESC) AS ProductRank
FROM
    Orders
GROUP BY
    Product;
```

Results		Messages	
	Product	TotalSales	ProductRank
1	Macbook Pro Laptop	7867600.00	1
2	iPhone	4710300.00	2
3	ThinkPad Laptop	4037959.62	3
4	Google Phone	3253800.00	4
5	27in 4K Gaming Monitor	2385958.82	5
6	34in Ultrawide Monitor	2307679.27	6
7	Apple AirPods Headphones	2252400.00	7
8	Flatscreen TV	1415700.00	8
9	Bose SoundSport Headp...	1289271.06	9
10	27in FHD Monitor	1108876.07	10
11	Vareebadd Phone	812000.00	11
12	20in Monitor	445349.51	12
13	LG Washing Machine	391800.00	13
14	LG Dryer	379800.00	14
15	Lightning Charging Cable	324639.25	15
16	USB-C Charging Cable	264202.55	16
17	Wired Headphones	229248.80	17
18	AA Batteries (4-pack)	104202.24	18
19	AAA Batteries (4-pack)	90812.28	19

-----Top Products by Sales in Each City

```

WITH CityProductSales AS (
    SELECT
        City,
        Product,
        SUM(Sales) AS TotalSales,
        RANK() OVER (PARTITION BY City ORDER BY SUM(Sales) DESC) AS ProductRank
    FROM
        Orders
    GROUP BY
        City, Product
)
SELECT
    City,
    Product,
    TotalSales
FROM
    CityProductSales
WHERE
    ProductRank = 1;

```

	City	Product	TotalSales
1	Atlanta	Macbook Pro Laptop	620500.00
2	Austin	Macbook Pro Laptop	423300.00
3	Boston	Macbook Pro Laptop	799000.00
4	Dallas	Macbook Pro Laptop	640900.00
5	Los ...	Macbook Pro Laptop	1241000...
6	New ...	Macbook Pro Laptop	1099900...
7	Portl...	Macbook Pro Laptop	566100.00
8	San ...	Macbook Pro Laptop	1883600...
9	Seattle	Macbook Pro Laptop	593300.00

----- Products Contributing to 80% of Sales

```

WITH TotalSales AS (
    SELECT
        Product,
        SUM(Sales) AS ProductSales
    FROM
        Orders
    GROUP BY
        Product
),
CumulativeSales AS (
    SELECT
        Product,
        ProductSales,
        SUM(ProductSales) OVER (ORDER BY ProductSales DESC) AS RunningTotal,
        SUM(ProductSales) OVER () AS TotalSales
    FROM
        TotalSales
)
SELECT
    Product,
    ProductSales,
    RunningTotal,
    (RunningTotal / TotalSales) * 100 AS CumulativePercentage
FROM
    CumulativeSales
WHERE
    (RunningTotal / TotalSales) <= 0.8;

```

	Product	ProductSales	RunningTotal	CumulativePercentage
1	Macbook Pro Laptop	7867600.00	7867600.00	23.365600
2	iPhone	4710300.00	12577900.00	37.354600
3	ThinkPad Laptop	4037959.62	16615859.62	49.346800
4	Google Phone	3253800.00	19869659.62	59.010100
5	27in 4K Gaming Mo...	2385958.82	22255618.44	66.096100
6	34in Ultrawide Moni...	2307679.27	24563297.71	72.949600
7	Apple AirPods Hea...	2252400.00	26815697.71	79.638900

```

-----Filter Cities with Sales Above a Threshold and
Specific Product Demand
SELECT
    City,
    SUM(Sales) AS TotalSales,
    SUM(CASE WHEN Product = 'USB-C Charging Cable' THEN QuantityOrdered ELSE 0 END) AS
USBCcableQuantity
FROM
    Orders
GROUP BY
    City
HAVING
    SUM(Sales) > 10000
    AND SUM(CASE WHEN Product = 'USB-C Charging Cable' THEN QuantityOrdered ELSE 0 END) >
50;

```

	City	TotalSales	USBCcableQuantity
1	Atlanta	2721689.32	1759
2	Portland	2267084.04	1459
3	New Y...	4567165.01	2994
4	Austin	1787851.98	1145
5	Seattle	2682930.41	1728
6	Boston	3576754.73	2349
7	San Fr...	8055046.60	5439
8	Los A...	5310846.93	3527
9	Dallas	2702230.45	1709

```

-----Fast Query (Using JOIN and Aggregation)-----
SELECT
    O.[Sr],
    O.[OrderID],
    O.[ProductCategory],
    O.[Product],
    O.[QuantityOrdered],
    O.[PriceEach],
    O.[OrderDate],
    O.[PurchaseAddress],
    O.[Month],
    O.[Sales],
    O.[City],
    O.[Hour],
    O.[TimeOfDay]
FROM
    [Health_Food_Flask].[dbo].[Orders] O
INNER JOIN (
    SELECT

```

```

        [City],
        MAX([Sales]) AS MaxSales
FROM
    [Health_Food_Flask].[dbo].[Orders]
GROUP BY
    [City]
) AS SubQuery ON
    O.[City] = SubQuery.[City] AND
    O.[Sales] = SubQuery.MaxSales
ORDER BY
    O.[City];

```

	Sr	OrderID	ProductCategory	Product	QuantityOrdered	PriceEach	OrderDate	PurchaseAddress	Month	Sales	City	Hour	TimeOfDay
12	5761	146717	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-25 07:59:59.997	657 Highland St, Atlanta, GA 30...	1	1700.00	Atlanta	8	Morning
13	5913	146863	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-27 17:19:59.997	864 Lakeview St, Atlanta, GA 3...	1	1700.00	Atlanta	17	Afternoon
14	6911	147808	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-21 13:18:59.997	740 8th St, Atlanta, GA 30301	1	1700.00	Atlanta	13	Afternoon
15	8598	149431	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-29 19:14:59.997	478 6th St, Atlanta, GA 30301	1	1700.00	Atlanta	19	Evening
16	44	150545	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-27 20:35:00.000	905 Meadow St, Atlanta, GA 30...	2	1700.00	Atlanta	20	Evening
17	938	151397	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-23 18:22:00.000	802 Chestnut St, Atlanta, GA 30...	2	1700.00	Atlanta	18	Evening
18	1050	151505	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-24 12:47:59.997	923 Maple St, Atlanta, GA 30301	2	1700.00	Atlanta	12	Afternoon
19	1242	151690	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-05 16:18:59.997	723 Spruce St, Atlanta, GA 30301	2	1700.00	Atlanta	16	Afternoon
20	1428	151866	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-14 08:17:59.997	76 5th St, Atlanta, GA 30301	2	1700.00	Atlanta	8	Morning
21	2349	152746	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-18 13:00:00.000	349 4th St, Atlanta, GA 30301	2	1700.00	Atlanta	13	Afternoon
22	2400	152794	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-12 09:58:00.000	638 Lake St, Atlanta, GA 30301	2	1700.00	Atlanta	9	Morning
23	2992	153356	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-24 21:06:00.000	914 Spruce St, Atlanta, GA 30301	2	1700.00	Atlanta	21	Evening
24	4155	154462	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-22 09:00:59.997	876 Hickory St, Atlanta, GA 303...	2	1700.00	Atlanta	9	Morning
25	4804	155079	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-18 22:05:00.000	648 North St, Atlanta, GA 30301	2	1700.00	Atlanta	22	Evening
26	5456	155703	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-19 16:05:00.000	381 2nd St, Atlanta, GA 30301	2	1700.00	Atlanta	16	Afternoon
27	6299	156504	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-14 21:27:59.997	869 Dogwood St, Atlanta, GA 3...	2	1700.00	Atlanta	21	Evening
28	6076	156292	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-03-01 23:39:59.997	109 Church St, Atlanta, GA 30301	2	1700.00	Atlanta	23	Evening
29	7678	157818	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-18 13:16:59.997	442 West St, Atlanta, GA 30301	2	1700.00	Atlanta	13	Afternoon
30	9579	158097	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-12 13:45:59.997	709 South St, Atlanta, GA 30301	2	1700.00	Atlanta	12	Afternoon

-----Slow Query (Using HAVING with Correlated Subquery)-----

```

SELECT
    [Sr],
    [OrderID],
    [ProductCategory],
    [Product],
    [QuantityOrdered],
    [PriceEach],
    [OrderDate],
    [PurchaseAddress],
    [Month],
    [Sales],
    [City],
    [Hour],
    [TimeOfDay]
FROM
    [Health_Food_Flask].[dbo].[Orders] O1
GROUP BY
    [Sr],
    [OrderID],
    [ProductCategory],
    [Product],
    [QuantityOrdered],
    [PriceEach],
    [OrderDate],

```



```

[PurchaseAddress],
[Month],
[Sales],
[City],
[Hour],
[TimeOfDay]
HAVING
[Sales] = (
    SELECT
        MAX([Sales])
    FROM
        [Health_Food_Flask].[dbo].[Orders] O2
    WHERE
        O2.[City] = O1.[City]
)
ORDER BY
[City];

```

Results Messages													
	Sr	OrderID	ProductCategory	Product	QuantityOrdered	PriceEach	OrderDate	PurchaseAddress	Month	Sales	City	Hour	TimeOfDay
1	155	141385	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-12 12:58:59.997	502 Walnut St, Atlanta, GA 30301	1	1700.00	Atlanta	12	Afternoon
2	224	141453	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-08 13:09:00.000	469 4th St, Atlanta, GA 30301	1	1700.00	Atlanta	13	Afternoon
3	745	141953	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-13 10:02:59.997	112 Maple St, Atlanta, GA 30301	1	1700.00	Atlanta	10	Morning
4	1876	143019	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-20 12:40:59.997	195 South St, Atlanta, GA 30301	1	1700.00	Atlanta	12	Afternoon
5	3208	144282	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-02 16:59:00.000	721 Spruce St, Atlanta, GA 30301	1	1700.00	Atlanta	16	Afternoon
6	3563	144616	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-21 12:08:00.000	232 9th St, Atlanta, GA 30301	1	1700.00	Atlanta	12	Afternoon
7	4196	145209	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-12 21:45:59.997	693 Washington St, Atlanta, GA 30301	1	1700.00	Atlanta	21	Evening
8	4803	145795	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-30 18:49:00.000	144 6th St, Atlanta, GA 30301	1	1700.00	Atlanta	18	Evening
9	4284	145295	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-06 14:08:00.000	291 West St, Atlanta, GA 30301	1	1700.00	Atlanta	14	Afternoon
10	5265	146239	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-01 12:56:00.000	635 River St, Atlanta, GA 30301	1	1700.00	Atlanta	12	Afternoon
11	5319	146290	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-06 20:17:59.997	169 River St, Atlanta, GA 30301	1	1700.00	Atlanta	20	Evening
12	5761	146717	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-25 07:59:59.997	657 Highland St, Atlanta, GA 30301	1	1700.00	Atlanta	8	Morning
13	5913	146863	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-27 17:19:59.997	864 Lakeview St, Atlanta, GA 30301	1	1700.00	Atlanta	17	Afternoon
14	6911	147808	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-21 13:18:59.997	740 8th St, Atlanta, GA 30301	1	1700.00	Atlanta	13	Afternoon
15	8598	149431	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-01-29 19:14:59.997	478 6th St, Atlanta, GA 30301	1	1700.00	Atlanta	19	Evening
16	44	150545	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-27 20:35:00.000	905 Meadow St, Atlanta, GA 30301	2	1700.00	Atlanta	20	Evening
17	638	151367	Laptops and Computers	Macbook Pro Laptop	1	1700.00	2019-02-23 16:33:00.000	802 Chestnut St, Atlanta, GA 30301	2	1700.00	Atlanta	16	Evening